Arkansas Alternative Energy Commission

Initial Report to

Governor Mike Beebe

Senate President Bob Johnson

House Speaker Robbie Wills

November 23, 2010

The Arkansas Alternative Energy Commission (AAEC) was created by Act 1301 of the 2009 session of the Arkansas General Assembly. The Commission is comprised of 15 members representing consumers and utilities, equally appointed by the Governor, Senate President and Speaker of the House.

The AAEC is charged to study:

(1) the feasibility of creating or expanding alternative energy sources in Arkansas.

(2) the effects of the use of alternative energy sources on economic development of the state.

(3) other issues related to alternative energy production and use and the impact of alternative energy that the commission considers appropriate.

The Commissioners wish to express our appreciation for the work done by the Governor's Commission on Global Warming, which created the impetus for formation of the AAEC; and to acknowledge the support of legislative and executive branch leadership on this issue.

Since its inception 11 months ago, the Commission has examined a variety of issues relative to Alternative Energy and recognizes that much lies ahead as the State seeks to develop a firm foundation for planning and development of these resources. The Commission continues to study, research and report on best practices and technologies in the field, and we greatly appreciate the assistance provided by the Public Service Commission, the Energy Office, the University of Arkansas Cooperative Extension Service, individuals in the community who provided expertise, and various State employees. We are of the conviction that alternative energy in the right amounts at the right times will assure a more secure energy future and a cleaner environment, and that all segments of our state must work together to educate and make the transition to a cleaner energy economy.

Background on Energy Efficiency, Net Metering Policy and Feed-in Tariff

The Arkansas electrical load is spread across three customer groups: residential, commercial and industrial. These customers are directly served by four investor-owned utilities (IOUs), seventeen electric cooperatives, and several municipal utilities. Arkansas ranks 15th in the U.S. in terms of energy-intensity per capita and 41st for our level of energy efficiency. (EIA 2007, ACEEE 2010) Arkansas is a net exporter of electricity with 14% of AR electricity generation being sold out of state. (ACEEE 2010) Policies and programs from surrounding states should be reviewed.

Current Arkansas State law (Subchapter 6 – Arkansas Renewable Energy Development Act of 2001) provides for residential and commercial net metering facilities that use solar, wind, hydroelectric, geothermal, or biomass resources to generate electricity including, but not limited to fuel cells and micro turbines that generate electricity if the fuel source is entirely derived from renewable resources. This law was intended to primarily offset part or all of the net-metering customer's requirements for electricity or is designated by the Public Service Commission as eligible for net metering service.

The Commission reviewed current activities within Arkansas as well as activities in surrounding states to determine what changes might be implemented to provide for growth within the alternative energy arena. Based on information provided by the Arkansas Public Service Commission for 2009, approximately 70 net metering customers are feeding their excess capacity to the electric utilities. All but one are residential customers, and are under five (5) kilowatts. The one commercial customer is one hundred (100) kilowatts.

Feed in tariffs result in more cost effective energy for the consumer in the long run and produce many benefits, including more megawatt hours of clean energy available for

consumers and a boost in the capacity for the state load. The estimated electrical consumption growth rate for AR to 2019 is 1.35% annually.

Arkansas' steadily growing energy demand provides an environment for investors and producers to expand the use of thermal or photovoltaic solar, in-stream hydro, small wind, small woody biomass, bio-fuel, farm biogas, and geothermal projects, all of which encourage economic development tied to new environmental technology jobs.

Arkansas currently lags behind many other states in alternative energy policies. Examples of policies that advance alternative energy in other states include:

- **Feed-in Tariff Legislation** have been enacted in four states, two municipalities, and eighteen European countries and Ontario have passed feed in tariffs, while ten other states are actively considering this issue.
- **General Disclosure Policies** have been passed in twenty-two states including D.C., but excluding Arkansas.
- **Public Benefits Funds for Efficiency** are in place in 23 states, but excluding Arkansas.
- **Net Metering Policies** are in place in 43 states, including Arkansas.
- **Rebates for Renewable Energy** are available in 23, including Arkansas and D.C.
- **Renewable Portfolio Standards** are in 29 states including D.C., but excluding Arkansas.
- **Sales Tax Incentives for Renewable Energy** are in place in 27 states, but excluding Arkansas.
- **Sales Tax Incentives for Energy Efficiency** are in place in 9 states, but excluding Arkansas.
- **Property Tax Incentive for Renewable Energy** are in place in 32 states, but excluding Arkansas.

- **Property Assessed Clean Energy (PACE)** is authorized in 23 states and DC, but excluding Arkansas.

Alternative energy policies covered in this report will encourage diversification of Arkansas' energy portfolio, increase energy independence, create a stimulus for new energy jobs, reduce greenhouse gas emissions, increase energy grid reliability via decentralized energy production, decrease the need for large-scale power generation, and decrease need for more peak demand capacity.

Recommendations

- **Increase residential cap on net metering.** Residential net metering facilities generating capacity be raised from twenty-five (25) kilowatts to fifty (50) kilowatts to address the growing market.
  - Ark. Code *Ann.* 23-18-603(6)(b) would require a change.
    - Current reading: Has a generating capacity of not more than twenty-five kilowatts (25 kW) for residential use or three hundred kilowatts (300 kW) for any other use.
    - Recommended change: *Has a generating capacity of not more than fifty kilowatts (50 kW) for residential use or three hundred kilowatts (300 kW) for any other use.*

    The Commission recommends a revision to the Ark. Code *Ann.* 23-18-603(6)(b) to increase generation capacity to not more than fifty kilowatts (50 kW) for residential use or three hundred kilowatts (300 kW) for any other use.

- **Carry-over net excess generation.** The billing period for net metering to remain unchanged but rather than the accumulated net excess generation expiring at

the close of the annual billing cycle the net-metering customer retains any and all credits for as long as they are a net-metering customer.

- Ark. Code Ann. 23-18-604(5)(A) would require a change.
  - Current reading: Any net excess generation credit remaining in a net metering customer's account at the close of an annual billing cycle shall expire
  - Recommended change: *Any net excess generation credit remains in a net-metering customer's account*

The Commission recommends a revision to the Ark. Code Ann. 23-18-604(5)(A) to provide that any net excess generation credit remains in a net-metering customer's account.

- **Grandfathering for current net metering customers.** Changes made to facility generating capacity or net excess generation credit shall be applied to existing net metering customers.

- **Feed in Tariff.** A feed in tariff is one simple way to achieve the goals of: promoting clean renewable energy production; increasing energy security; reducing greenhouse gases; and providing more long term certainty for utilities, potential investors, and providers through long contracts. An Arkansas feed in tariff should consider the following:
  - Grid interface costs should be borne by the producer of renewable energy (RE), with corresponding timely payments made by the producer to the relevant utility for the expense of interfacing with the grid.
  - Timely interfacing by the utility to ensure that RE can be used on the grid, minimizing any disruption of energy flow to the energy grid.
  - Allow the producer the option of retaining Renewable Energy Credits derived from alternative energy production and the authority to sell them in the commercial market.

- Establish contract-based, fixed duration increases on renewable energy rates that are aligned with existing energy prices.
- Provide guidance on long term contracts between producers and utilities that address production and pricing caps, to ensure predictable, consistent levels of RE production and purchase by utilities.
- Establish facility cap ranges on non-commercial RE that accommodate the unique technologies and capacities of all alternative energy sources, including hydro, biomass, biogas, wind, thermal solar, geothermal and solar photovoltaic.
- Construction of a statewide cap on renewable energy production, to ensure that predictable amounts of RE are available for use on the grid during a defined period.
- Define qualifying renewable energy producers as facilities owned and operated in Arkansas by residents of Arkansas, whose facility can operate in parallel with the grid.
- Authorize the Arkansas Public Service Commission to determine pricing and production parameters, consistent with Federal Energy Regulatory Commission (FERC), with input from public and private sector parties.

The Commissions recommends the state develop a feed in tariff.

Suggestions for Further Study

The Commission recognizes the need for the review of issues relating to alternative energy that may include the following:

- Energy efficiency program objectives relating to cost effectiveness for planning and operational purposes.
- Loading order of efficiency relating to alternative and existing energy sources.
- Balancing energy efficiency with reliability, universality and affordability.

- Economic disincentives currently faced by utilities when promoting energy efficiency.
- Short-term and long term rate recovery mechanisms for participating entities.
- Coordinating energy efficiency efforts with non-utility efficiency programs.
- Existing residential buildings codes for both rural an urban areas.
- Manufacturer incentives to encourage adoption of energy efficiency measures.
- Consumer-based incentives, including low-interest revolving loans, rebates and tax incentives.
- On-bill Financing as a financial tool for cost-effective energy efficiency.
- General Disclosure Policies to ensuring that consumers are fully informed as to the source of their power
- State Interconnection Policy Standards to encourage utility participation and ensure reliable energy resources from alternative and renewable energy producers.
- Renewable Energy Access policies to examine the rights of both property owners and energy producers in relation to existing provisions of state and local governments, historic districts, and homeowner / property associations.
- Development of a State Energy Plan by 2012, as a basis for Arkansas to effectively participate in the alternative energy marketplace.

Summary

The members of the Arkansas Alternative Energy Commission appreciate the opportunity to serve as a resource to executive, legislative and agency policy makers and submit these findings as part of any on-going effort to advance our state's position and role in the production and utilization of alternative energy resources.

Appendices

Preliminary reports in three key areas were developed by work groups comprised of members of the AAEC; and with input from state agencies, as well as commercial, non-commercial and residential stakeholders.

Appendix 1

Arkansas Alternative Energy Commission

Working Group

On

Energy Efficiency

Findings and Recommendations

Summary

Energy efficiency can reduce the demand for new generation over time and should be considered a high priority in energy resource planning and Arkansas energy policy. Energy efficiency is the first step and least-cost energy resource available in Arkansas. State energy policies need improvements in order to capture the available cost savings. We believe that Arkansas has many cost-effective opportunities to use energy efficiency outlined in this report. The Working Group plans to outline and develop a full set of energy efficiency recommendations over the next year.

Background

The Arkansas electrical load is spread across three customer groups: residential, commercial and industrial. These customers are directly served by four investor-owned utilities (IOUs), seventeen electric cooperatives, and several municipal utilities. Arkansas ranks 15th in the U.S. in terms of energy-intensity per capita and 41 for our level of energy efficiency. (EIA 2007, ACEEE 2010) Arkansas is a net exporter of electricity with 14% of AR electricity generation being sold out of state. (ACEEE 2010) Policies and programs from surrounding states should be reviewed.

The legislature is encouraged to:

- Develop and adopt a state energy plan by 2012.
- Request that the Public Service Commission open a docket to research on-bill finance for cost-effective energy efficiency by 2012.

Conclusion and Next Steps

This Working Group will continue to research energy efficiency opportunities and revise and develop recommendations over the next year.

Appendix 2

Arkansas Alternative Energy Commission

Working Group

On

Net Metering

Findings and Recommendations

Summary

Current Arkansas State law provides for residential and commercial net metering facilities that use solar, wind, hydroelectric, geothermal, or biomass resources to generate electricity including, but not limited to fuel cells and micro turbines that generate

electricity if the fuel source is entirely derived from renewable resources. This law was intended to primarily offset part or all of the net-metering customer's requirements for electricity

The Working Group reviewed current activities within Arkansas as well as activities in surrounding states to determine what changes might be implemented to provide for growth within the alternative energy arena. Approximately 70 net metering customers are feeding their excess capacity to the electric utilities with the kilowatts being generated ranging from five (5) kilowatts to twenty-four (24) kilowatts. After discussions with the Arkansas Public Service Commission and the Arkansas Department of Energy the following recommendations are being submitted.

Recommendations

- Residential net metering facilities generating capacity be raised from twenty-five (25) kilowatts to fifty (50) kilowatts to address the growing market.
    - Ark. Coda *Ann.* 23-18-603(6)(b) would require a change.
        - Current reading: Has a generating capacity of not more than twenty-five kilowatts (25 kW) for residential use or three hundred kilowatts (300 kW) for any other use.
        - Recommended change: ***Has a generating capacity of not more than fifty kilowatts (50 kW) for residential use or three hundred kilowatts (300 kW) for any other use.***

- The billing period for net metering to remain unchanged but rather than the accumulated net excess generation expiring at the close of the annual billing cycle the net-metering customer retains any and all credits for as long as they are a net-metering customer.
    - Ark. Coda Ann. 23-18-604(5)(A) would require a change.

- Current reading: Any net excess generation credit remaining in a net metering customer's account at the close of an annual billing cycle shall expire
- Recommended change: ***Any net excess generation credit remains in a net-metering customer's account***

- Changes made to facility generating capacity or net excess generation credit shall be applied to existing net metering customers.

Appendix 3

Arkansas Alternative Energy Commission

Working Group

On

Feed In Tariff

Findings and Recommendations

I. Background:

Four states, two municipalities, and eighteen European countries and Ontario have passed feed in tariffs, while ten other states are actively considering this issue. The feed in tariff is one simple way to achieve goals of: **1) promoting clean renewable energy production; 2) increasing energy security; 3) reducing greenhouse gases; and 4) provide more long term certainty for utilities, potential investors, and providers through long contracts.**

Feed in tariffs result in more cost effective energy for the consumer in the long run and produce many benefits, including more megawatt hours of clean energy available for consumers and a boost in the capacity for the state load. The estimated electrical consumption growth rate for AR to 2019 is 1.35% annually.

Arkansas' steadily growing energy demand provides an environment for investors and producers to expand the use of thermal or photovoltaic solar, in-stream hydro, small wind, small woody biomass, bio-fuel, farm biogas, and geothermal projects, all of which encourage economic development tied to new environmental technology jobs.

The following are the current recommendations from the Arkansas Commission on Alternative Energy, intended as starting points for policy planning for a feed in tariff for Arkansas. Attached are resources on feed in tariffs worldwide and on the renewable energy potential in Arkansas, for further reading.

II. Policy Considerations:

1. Grid interface costs should be borne by the producer of renewable energy (RE), with corresponding timely payments made by the producer to the relevant utility for the expense of interfacing with the grid.

2. Timely interfacing by the utility to ensure that RE can be used on the grid, minimizing any disruption of energy flow to the energy grid.

3. Allow the producer the option of retaining Renewable Energy Credits derived from alternative energy production and the authority to sell them in the commercial market.

4. Establish contract-based, fixed duration increases on renewable energy rates that are aligned with existing energy prices.

5. Provide guidance on long term contracts between producers and utilities that address production and pricing caps, to ensure predictable, consistent levels of RE production and purchase by utilities.

6. Establish facility cap ranges on non-commercial RE that accommodate the unique technologies and capacities of all alternative energy sources, including hydro, biomass, biogas, wind, thermal solar, geothermal and solar photovoltaic.

7. Construction of a statewide cap on renewable energy production, to ensure that predictable amounts of RE are available for use on the grid during a defined period.

8. Define qualifying renewable energy producers as facilities owned and operated in Arkansas by residents of Arkansas, whose facility can operate in parallel with the grid.

9. Authorize the Arkansas Public Service Commission to determine pricing and production parameters, consistent with Federal Energy Regulatory Commission (FERC), with input from public and private sector parties.

Background Reading on Feed in Tariffs and Renewable Energy Potential in Arkansas:

A. Feed in Tariffs:

1. Grading North American Feed in Tariffs. Report by the World Future Council, by Paul Gipe. May 2010.

2. NREL Report on Feed in Tariffs. Office of Energy Efficiency and Renewable Energy. July 2010. (Gives several states' examples)

3. Renewable Energy World Website Article on Feed in Tariffs. June 2009. www.renewableenergyworld.com.

4. Green Economic Recovery. Political Economy Research Institute: Center for American Progress. Amherst, Massachusetts. 2008. www.peri.org.

B. Renewable Energy Potential in Arkansas

1. Solar Resources in Arkansas: William Ball, Stellar Sun. Little Rock.

2. Solar Map of US: Average Daily Solar Radiation Per Month. NREL. Derived from the l961-1990 Database of 239 Sites of the National Solar Radiation Data Base, showing AR having 4-5 kWh/m2/day.

3. National Renewable Energy Lab Report on Wind Resources in Arkansas. www.nrel.gov.

4. Wind Map of AR: ar_80m.pdf. A wind map by National Renewable Energy Lab and AWS Truewind at 80 meters above the ground. October 6, 2010. www.nrel.gov.

5. Biomass Resources in Arkansas: Dr. Matthew Pelkke, University of Arkansas at Monticello. 2009. View under References/Documents at Alternative Energy Commission website.

6. Biomass Sustainability and Carbon Policy Study: Mamomet Center for Conservation Sciences, Massachusetts. (Worldwide analysis of alternative fuel resources). View under References/Documents at Alternative Energy Commission website.

7. In-stream Hydro Resources in Arkansas: Attorney Mark Hicks, North Little Rock.

Appendix 4

Arkansas Alternative Energy Commission
Membership

Commissioner:	City:	Appointed by:	Representing:
Mr. Warren L. Allen	Texarkana	President Pro Tempore	Utility
Dr. Stanley Baker	Fayetteville	Governor	Consumer
Mr. Kurt Castleberry	Little Rock	Governor	Utility
Mr. Michael Drake	North Little Rock	Governor	Consumer
Mr. Leo Hauser, Chair	Little Rock	House Speaker	Consumer
Mr. George Heintzen, Jr.	Conway	Governor	Utility
Mr. Leif Kindberg	Fayetteville	House Speaker	Consumer
Mr. Mikel Lolley	Fayetteville	Governor	Consumer
Ms. Debbie Moreland	Roland	President Pro Tempore	Consumer
Ms. Dina Nash	Little Rock	House Speaker	Consumer
Ms. Frances Eason-Nelson	Arkadelphia	House Speaker	Utility
Mr. Mike Pinkett	Conway	President Pro Tempore	Consumer
Ms. Rita Potts	Batesville	President Pro Tempore	Consumer
Mr. Gary Sams	Morrilton	President Pro Tempore	Utility